



Subject card

Subject name and code	Physics II, PG_00040165						
Field of study	Mechanical Engineering						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2024/2025		
Education level	first-cycle studies	Subject group			Obligatory subject group in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			English		
Semester of study	2	ECTS credits			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Zakład Automatyki i Energetyki Morskiej -> Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Małgorzata Śmiałek-Telega					
	Teachers	dr hab. inż. Małgorzata Śmiałek-Telega					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM		
	Number of study hours	15	3.0	7.0	25		
Subject objectives	Student knows the basics of electricity and magnetism; student is familiar with the concept of electromagnetic waves						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_U01	The student can solve a physical problem on the basis of data taken from sources.			[SU1] Assessment of task fulfilment		
	K6_W02	The student has knowledge of modern physics.			[SW1] Assessment of factual knowledge		
Subject contents	Electricity: Electric charge and electric field. Gauss' law, electric field potential, capacitance; current and resistance. Magnetic field, magnetic induction; magnetic field from current-carrying wires. Electromagnetic waves: propagation of waves, Poyntings vector, spectrum of electromagnetic waves.						
Prerequisites and co-requisites	Course credit Physics I						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	final test	50.0%			100.0%		
Recommended reading	Basic literature	Halliday & Resnick FUNDAMENTALS OF PHYSICS by J EAR L WALKER, 10th edition (extended), Wiley, 2014					
	Supplementary literature	University Physics Volume1, 2 and 3					
		https://openstax.org/details/books/university-physics-volume-1					
		https://openstax.org/details/books/university-physics-volume-2					
	https://openstax.org/details/books/university-physics-volume-3						
	eResources addresses	Adresy na platformie eNauczanie:					

Example issues/ example questions/ tasks being completed	Let k denote $1/4\epsilon_0$. What is the magnitude of the electric field at a distance r from an isolated point charge q ? A point charge is placed at the center of a spherical Gaussian surface. When is the electric flux Φ_E changed? A hydrogen atom that has lost its electron is moving east in a region where the magnetic field is directed from south to north. Which direction will it be directed?
Work placement	Not applicable

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